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Electronic Supplemental Material

Ischemia-induced Drp1 and Fis1-mediated mitochondrial fission and right ventricular dysfunction in pulmonary hypertension

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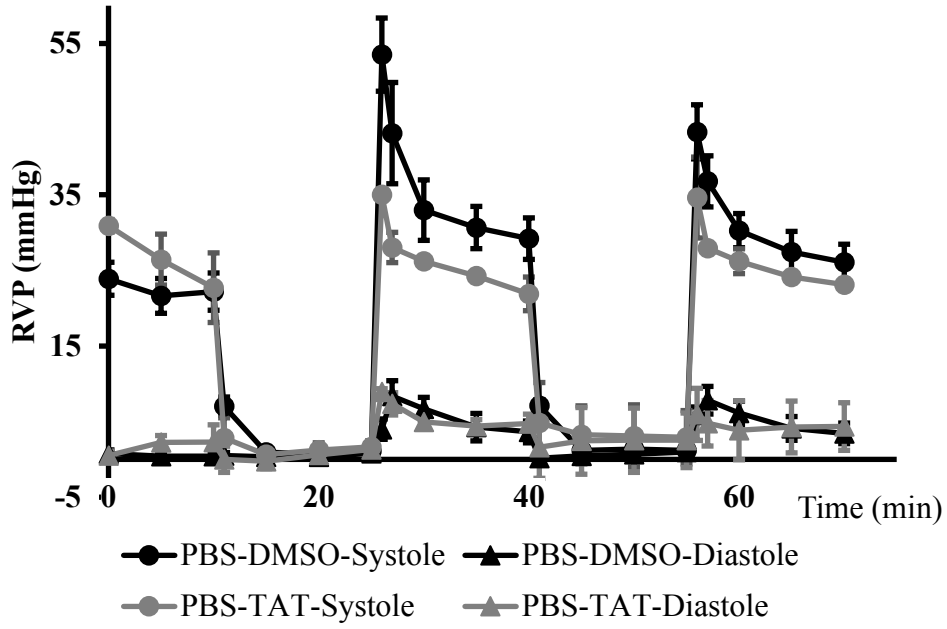
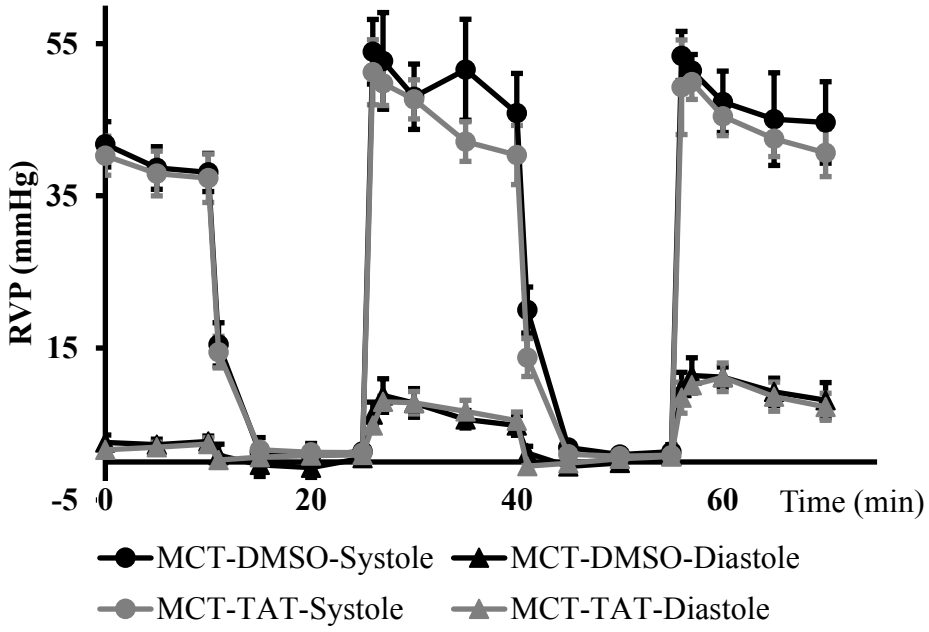
Supplemental Figures

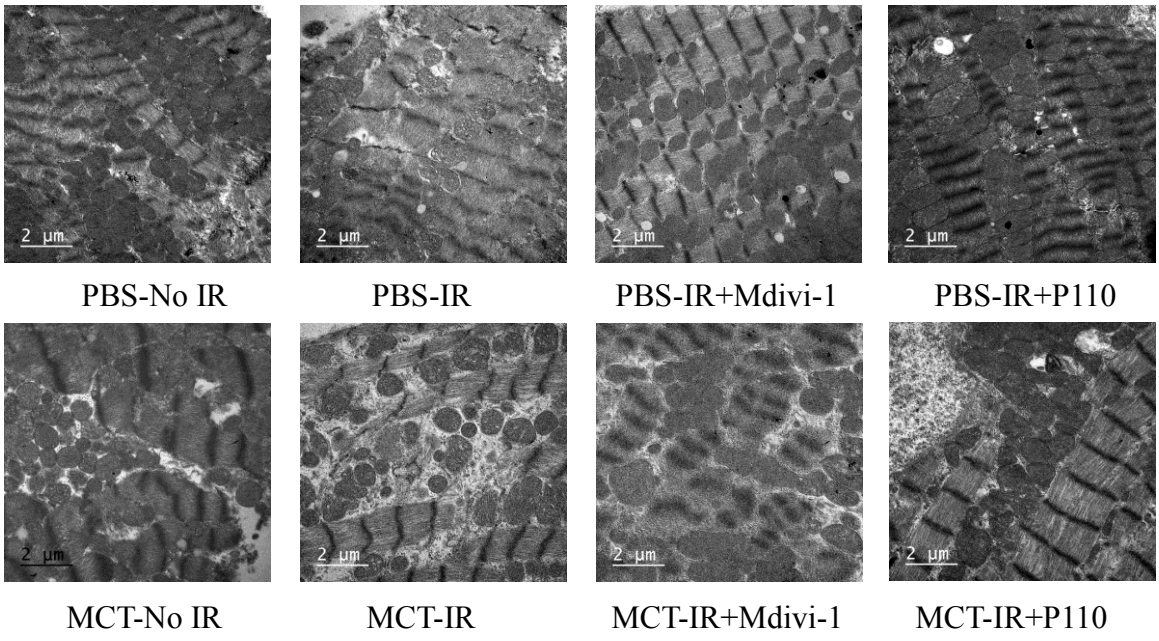
(A)



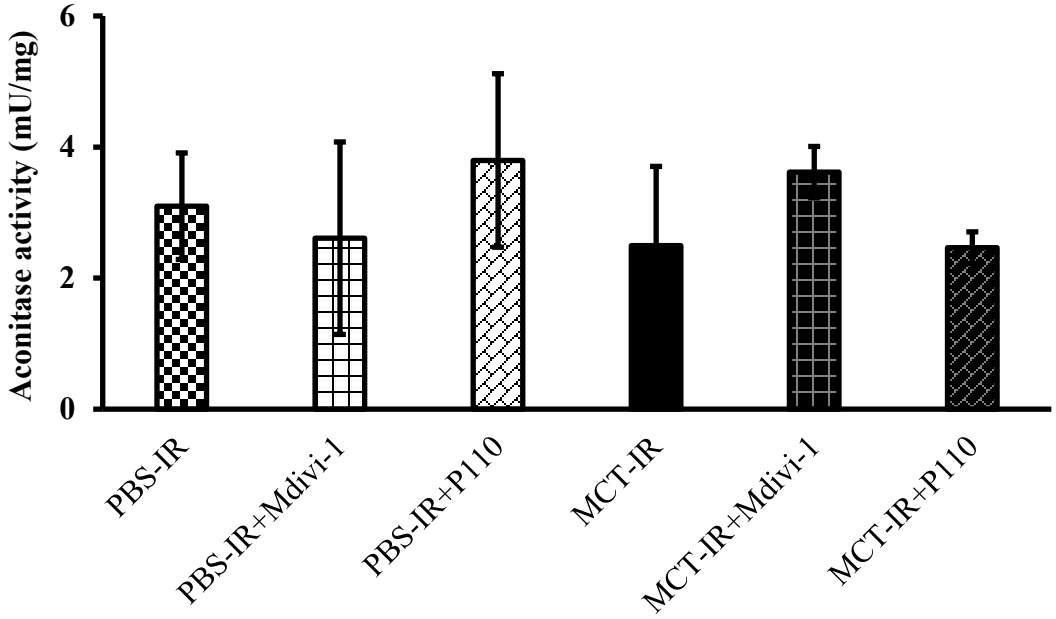
(B)



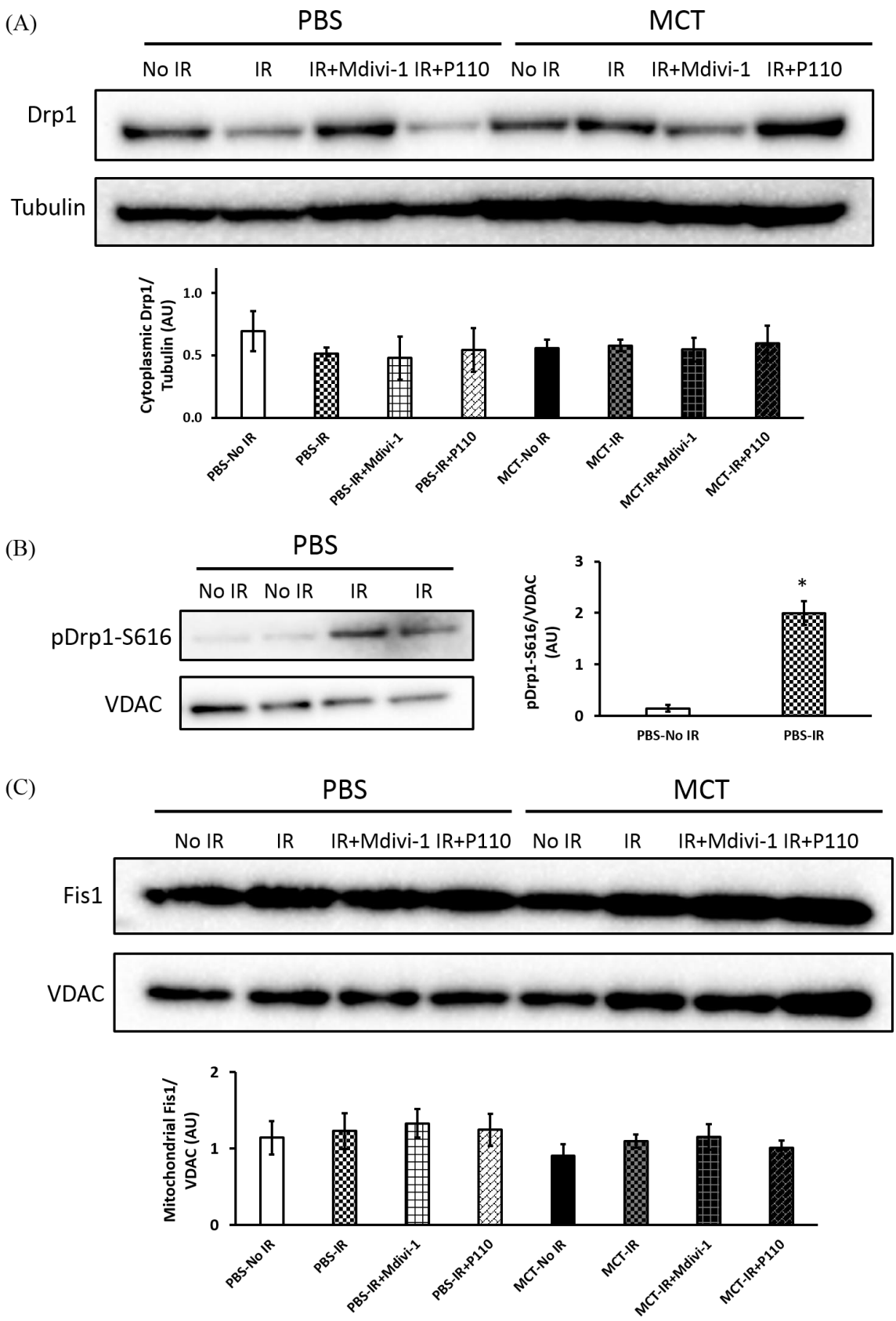
Supplemental Figure S1. Comparison of RV pressure between the two vehicle controls, i.e., DMSO and TAT. No significant difference in RV pressure was observed between DMSO and TAT in either **(A)** PBS or **(B)** MCT RVs. RVP, RV pressure; MCT, monocrotaline. *n* = 4~7/group.



Supplemental Figure S2. Representative TEM images of mitochondrial morphology and ultrastructure at a magnification of ×2100. MCT, monocrotaline; IR, ischemia-reperfusion.



Supplemental Figure S3. Summary of aconitase activity in RV tissues with or without treatment of Mdivi-1 or P110 in the Langendorff experiment. No significant change was observed with treatment of Mdivi-1 or P110. MCT, monocrotaline; IR, ischemia-reperfusion. n = 4~6/group.


(A)
PBS
MCT
No IR
IR
IR+Mdivi-1
IR+P110
No IR
IR
IR+Mdivi-1
IR+P110
Drp1
Tubulin
Cytoplasmic Drp1/ Tubulin (AU)
1.0
0.5
0.0
PBS-No IR
PBS-IR
PBS-IR+Mdivi-1
PBS-IR+P110
MCT-No IR
MCT-IR
MCT-IR+Mdivi-1
MCT-IR+P110
(B)
PBS
No IR
No IR
IR
IR
pDrp1-S616
VDAC
pDrp1-S616/VDAC (AU)
3
2
1
0
*
PBS-No IR
PBS-IR
(C)
PBS
MCT
No IR
IR
IR+Mdivi-1
IR+P110
No IR
IR
IR+Mdivi-1
IR+P110
Fis1
VDAC
Mitochondrial Fis1/ VDAC (AU)
2
1
0
PBS-No IR
PBS-IR
PBS-IR+Mdivi-1
PBS-IR+P110
MCT-No IR
MCT-IR
MCT-IR+Mdivi-1
MCT-IR+P110

Supplemental Figure S4. Summary of cytoplasmic Drp1 and mitochondrial pDrp1-S616 and Fis1 measured from immunoblotting.

(A) Expression of the inactive, cytoplasmic expression of Drp1 was less though not significant in MCT vs. PBS RVs at baseline without IR. IR reduced cytoplasmic Drp1 expression in normal RVs though not significantly but did not further reduce the low basal expression in MCT RVs; Neither Mdivi-1 nor P110 changed the cytoplasmic expression of Drp1. n = 3~5/group. **(B)** Expression of the activated Drp1, i.e., Drp1 phosphorylation at serine 616 (pDrp1-616), was increased in mitochondria following IR in PBS RVs. In these experiments, the expected increase in mitochondrial pDRp1-616 did not occur in MCT RVs with IR (data not shown). n = 2/group. * $P < 0.05$ vs. PBS-No IR. **(C)** Mitochondrial expression of Fis1 was not significantly different between PBS and MCT RVs. MCT, monocrotaline; IR, ischemia-reperfusion. n = 3~5/group.

Supplemental videos

Videos on RV tissues stained with TMRM (red) and NucBlue (blue)

Supplemental Video S1. PBS-No IR.avi
Supplemental Video S2. PBS-IR.avi
Supplemental Video S3. PBS-IR+Mdivi-1.avi
Supplemental Video S4. PBS-IR+P110.avi

Supplemental Video S5. MCT-No IR.avi
Supplemental Video S6. MCT-IR.avi
Supplemental Video S7. MCT-IR+Mdivi-1.avi
Supplemental Video S8. MCT-IR+P110.avi